

REMARKS

Reconsideration of this application is requested.

Claims 1-3, 5-9, 12, and 13: are rejected under 35 U.S.C. 103(a) as being unpatentable over Stojkov et al. (US 5,178,566) in view of Hasl et al. (US 6,468,120). Stojkov discloses a vertical drive housing (12). Housing (12) has upper and lower ends (figure 1B). Drive shaft (14) and universal joint (161) are a means for attaching engine (13) perpendicularly to the housing. Engine (13) has an output shaft (162) located within the housing. Propeller shaft (261) is attached to the lower end of the housing on an opposite side of the housing from the engine. Mounting structure (80) comprises bracket (81) which constitutes a pivotal transom mounting bracket located intermediate the housing (12) and the transom. The mounting structure allows for both tilt and steering pivotal movement of the housing (12). Belt (37) is within the housing (12) and connects the engine to the propeller shaft. Stojkov discloses a water cooled engine. Hasl discloses a marine propulsion unit with an inboard engine and an outdrive, similar to that of Stojkov. Hasl teaches that the engine can be cooled using an air cooling system, an open loop water cooling system, or a closed loop water cooling system. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stojkov by replacing the water cooling system with an air cooling system. The motivation would be to reduce the size, weight, and complexity of the engine.

In response: Claim 1 has been amended to claim only a drive assembly having means for temporary attachment to a boat transom, the drive assembly further comprising an engine mounting plate but no engine. Since both of the cited references of Stojkov and Hasl are out drives that are fixed to a boat transom and do not include engine mounting plate. The cited references do not teach or otherwise suggest the invention as amended. It should be noted that there is a distinct difference between the terms attaching, mounting, connecting or coupling and are certainly not interchangeable. Coupling an engine to a drive unit by a universal joint is far different from mounting and engine directly to a drive assembly.

A portable drive assembly having means for temporary attachment to the transom of a shallow draft watercraft said portable drive assembly comprising an elongated drive housing enclosing an upper drive assembly a lower driven assembly and a timing belt connecting said upper drive assembly to said lower driven assembly, an engine mounting plate attached externally to said drive housing located adjacent said upper drive assembly perpendicular to said drive housing said lower driven assembly further comprising a

propeller shaft partially enclosed within a shaft housing attached to said drive housing adjacent said driven assembly extending a least 12 inches beyond said drive housing and a propeller attached to said propeller shaft.

Claim 2, Stojkov shows a transmission (17) for reversing drive rotation.

Response:

Claim 2 as amended herein claims a transmission mounted to said engine-mounting plate coupled externally to said upper drive assembly for reversing drive rotation. The cited reference of Stojkov calls for a transmission connected to a clutch and an engine.

The instant claim is limited to the transmission being mount to the engine mounting plate and coupled to the upper drive assembly not to a clutch or an engine. Stojkov does not teach or suggest the mounting of the transmission. In fact, the Stojkov transmission is connected to the upper drive assembly via clutch and universal joints not necessary in the instant invention. By Reading Stojkov it would have been unobvious to leave these elements out of the drive train or to provide an engine mounting plate fixed to the drive assembly for mounting an engine.

Claim 3, Stojkov shows steering controls (22). Stojkov does not specifically show throttle controls. However, it is well known and common to provide throttle controls such that the operator can control the output of the engine and therefore the speed of the boat. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Stojkov by providing a throttle control. The motivation would be to allow the operator can control the output of the engine and therefore the speed of the boat.

Response:

Where is may be obvious to some skilled within the art to provide speed and steering controls to an engine is quite unobvious to provide such controls for a drive assembly without an engine according to Claim 3 which is dependent on claim 1. Providing such steering and speed controls for a temporary drive with no engine is even more unobvious. Not knowing what engine will be used or what kind of watercraft the drive assembly will be use on is far from obvious.

Claim 5, Stojkov shows an upper pulley, a lower pulley, and a belt. Stojkov in view of Hasl as described above with respect to claims 1-3 and 5 contains all of the limitations of claims 6-9 and 12.

Response to claim 5: as amended distinguishes over the prior art in that the timing belt of claim 1 is cooperative with timing pulleys and the belt is unobstructed by the housing walls etc and has not rollers or tensioner wheels etc.

Response regarding claims 6-12 as amended claims a portable outboard engine and drive assembly having an external engine mounting plate and an air-cooled utility engine mounted thereto coupled externally to the upper drive pulley assembly. The cited references of either Stojkov or Hasl both being out drives depending on inboard engines and not outboard engine and drive assemblies for temporary mounting to shallow draft watercraft do not suggest or teach the claimed invention. One of ordinary skill reading the cited references could not have envisioned the claimed invention since they teach away from the invention by requiring far more elements than are needed for the instant invention.

Regarding claim 13, Stojkov in view of Hasl does not specifically disclose the recited method steps. The steps, however, are inherent in the making and use of the modified invention of Stojkov. Stojkov discloses that the outdrive can be tilted up to a position where it is not below the bottom of the boat. Stojkov also discloses that the outdrive can kick-up to such a position in response to striking an object in the water. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to devise the recited method steps. The motivation would be to make and use the modified invention of Stojkov.

Response regarding Claim 13.

Examiner's recitation regarding the tilting and kick-up properties of the cited references is an erroneous interpretation of the adjustability of the outboard engine and drive assembly especially as now amended. The claim clearly defines the adjustment of the drive relative to the transom in a manner whereby the propeller shaft is positioned above the bottom of the watercraft amended to include the limitation of "when driving the watercraft". It would seem obvious that all such drives have tilt and kick-up capability. However, as originally claimed it seems equally obvious that the adjustment as claimed was meant to be adjusted so that the propeller shaft was adjusted in a manner whereby it was not allowed to extended blow the bottom of the watercraft. A Positive limitation of a claim seems better than a negative limitation. There is any number of things such an adjustment dose not do.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stojkov in view of Hasl as applied to claims 1 and 6 above, and further in view of Foreman (US 6,302,750). Stojkov shows a propeller shaft housing (246, 247). Stojkov shows a propeller shaft (261) that is supported at the ends of the housing and extends outward of either end of the housing. Stojkov shows thrust bearings (244, 245) that support the shaft (see figure 13). Stojkov shows a skeg (280). Stojkov does not show that the skeg is triangular. Stojkov does not disclose seals. Skegs come in various shapes and sizes. Foreman shows a triangular seal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify

Stojkov by using a triangular skeg instead. The motivation would be to reduce the weight of the outdrive by using less material in the skeg (280) by removing the portion behind the angled portion (figure 1 B). Furthermore, it is well known and common to use seals is a propeller shaft housing to prevent water from harming the bearings. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stojkov by using seals around the bearings (244, 245). The motivation would be to prevent water from harming the bearings.

Response regarding claim 4 and 10: As amended claim 4 is novel and distinguishes over the cited reference of *Stojkov* in that *Stojkov* does not disclose thrust bearing as suggest by examiner. The shaft bearings shown as items 244 and 245 are simply ball bearings. Thrust bearings are tapered roller bearings designed to take extreme thrust loads as disclosed in applicant's specification. When the propeller shaft of the instant invention is buried in mud the full torque of the drive and the weight of the boat is applied to the shaft and its bearings in both forward and reverse direction with out any slippage as opposed to the propeller being in water. The cited reference of *Stojkov* uses two halves to comprise the shaft housing which is also an integral part of the drive housing. The instant invention as claimed has a shaft housing attached externally to the drive housing and extends at least 12 inches beyond the drive housing. The absence of these limitations as well as others in the teachings of cited reference make the instant claim 4 unobvious.

The *skeg* in the cited reference of *Stojkov* is an integral part of the drive housing enclosing the drive and propeller shaft and does not teach or suggest the use a drive shaft assembly externally attached to a sealed drive housing or that a triangle shaped fin should be mounted to such a shaft housing. The shape of the fin is a limitation as is its location and cannot be ignored. Anyone of ordinary skill within the art reading the cited reference of *Stojkov* would assume that such a Skeg would need to be placed directly under the drive assembly and that the drive shaft assembly should be and integral part of the drive assembly. It takes imagination beyond that of a skilled worked to redesign a drive leaving out 50% of the components and rearranging nearly every thing else. This is assuming that one reading the reference has a need to do so. Only in hind sight could anyone make such changes since the reference does not suggest the need for an outboard motor and drive assembly that is located above the bottom of the hull for use in driving a shallow watercraft in very little or no water.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stojkov in view of Hasl as applied to claim 6 above, and further in view of Meisenburg et al (US 5,415,576). Stojkov does not disclose the length of the propeller shaft assembly. Meisenburg shows an outdrive similar to that of Stojkov. Meisenburg discloses that the distance form the propeller shaft (156) to the input shaft (28) is about 8 to 15 inches. It can be seen from figure 2 of Meisenburg that the length of the propeller shaft assembly, from the front edge of the housing (198) to the back end at nut (180) is substantially longer than the distance between shaft (156) and shaft (28). Using figure 2

of Meisenburg as a starting point, it would be within the range of routine experimentation to make a propeller shaft assembly that is at least 18 inches long. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stojkov by making the propeller shaft assembly at least 18 inches long.

The motivation would be to optimize design parameters such as size and weight by starting with a known size suggested by Meisenburg.

Response regarding claim 11: First of all the cited reference of Meisenburg is A portable outboard engine and drive assembly having means for temporary attachment to the transom of a shallow draft watercraft. The Meisenburg apparatus is a surface outdrive assembly that is gear driven, and does not teach or otherwise suggest a propeller shaft externally attached to a drive unit having an engine mount thereto or that the purpose of the extended shaft is to

insure propulsion of a shallow watercraft when the craft is incapable of planing. In fact, the Meisenburg drive shaft is extended for the purpose of attaching counter-rotating propellers. The length of the driven shaft of Meisenburg is not disclosed and an extrapolation based on relationships between shafts shown in a drawing are simply not an accepted practice. Meisenburg does not teach or suggest the need to extend the shaft for some distance to enhance the ability of the boat's propulsion when then the craft is on level. The length of the shaft in the instant claim is measured from the sealed drive housing to which the shaft housing is attached and not measure from the front of a housing as described by examiner, nor is a relationship established between the drive shaft assembly and the driven shaft assembly and the length of the driven shaft claimed,

The courts have ruled repeatedly that the cited reference must teach or suggest the instant claim and the claim limitations may not be negated.

It seems that the examiner in this case is again using hindsight in an attempt to concoct a relationship that will support his conclusion of an obvious limitation for the length of the driven shaft. The length of the driven shaft in the instant application is derived by the desired speed, weight and size of the watercraft and not a function of having multiple propellers.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pignata ('763, provided by applicant) and Brandt ('866) both show the equivalence of an outboard motor and an inboard-outdrive assembly for a belt driven propulsion.

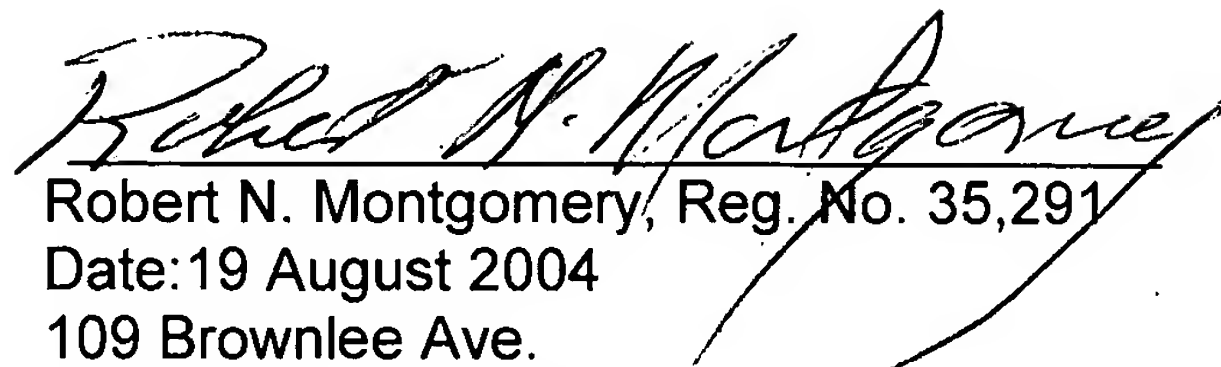
Inasmuch as each of the rejections have been overcome by the amendment to the claims and through arguments relating thereto, and all of the examiner's suggestions and requirements have been satisfied, it is respectfully requested that the rejections be withdrawn and that this application be passed to issue.

Should the examiner feel that a telephone conference would advance this application, she is encouraged to contact the undersigned at the telephone number listed below.



Please contact the submitter if any fees are due.

Respectfully submitted,



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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, P.O. Box 1450 Alexandria, VA 22313-1450 on 11/15 2004.



Robert N. Montgomery,